

* SWBAT solve word problems using $F=ma$

Sep 6-2:31 PM

MAKE UP YOUR OWN...

$$F = m a$$



Oct 24-7:50 AM

Reaction Board

Pick one prompt and finish the sentence on your post-it

I learned ...

I wonder...

I wish ...

I was surprised by...

Oct 24-7:54 AM

Welcome!!!

SECA Physics
Thursday 23 October 2014

* Pick up:

- slip of paper (for later)
- whiteboard, marker, eraser
- piece of cornell notes paper

H. Leslie Grebe

Centering...

Opening Question:

Does the size of a pitcher's "wind-up" affect how fast the ball goes?

YES

Why do you say that?

MORE TIME TO
SPEED IT UP!

Eureka 4: acceleration

<http://www.youtube.com/watch?v=gkcidRnzGfc>

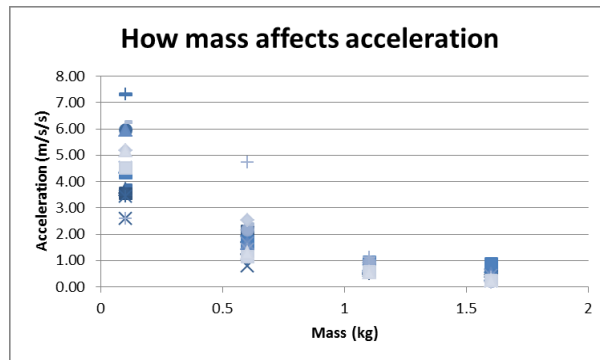


Sep 7-7:04 AM

EQ: What does Newton's 2nd Law mean for objects?

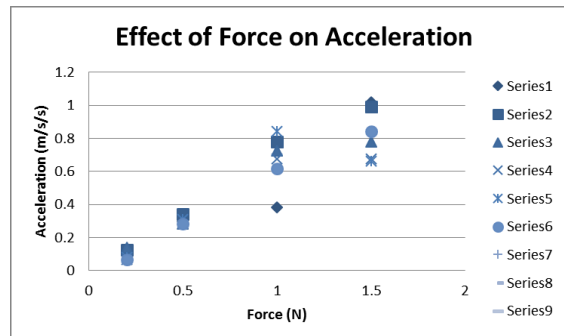
More mass

=> less acceleration



More force

=> more acceleration



Oct 21-1:23 PM

Graphs of our experiments...

Newton's 2nd Law:

$$\rightarrow F = m a$$

FORCE = MASS · ACCELERATION

MON: <SAME> = ↑ · ↓

TUES: ↑ = <SAME> ↑

MORE MASS → LESS ACC;
MORE FORCE → MORE ACC;

Oct 28-6:55 AM

Newton's 2nd Law:

MORE MASS \rightarrow LESS ACC.
 MORE FORCE \rightarrow MORE ACC.

$$\rightarrow F = m a$$

FORCE = MASS · ACCELERATION

$$\frac{F}{m \cdot a}$$

$$1 \text{ N} = 1 \frac{\text{kg} \cdot \text{m}}{\text{s}^2}$$

Practice:

A 2 kg ball is accelerated at 3 m/s^2 . What is the force accelerating it?

$$F = m \cdot a = 2 \text{ kg} \cdot 3 \text{ m/s}^2 = 6 \frac{\text{kg} \cdot \text{m}}{\text{s}^2} = 6 \text{ N}$$

If I push with 10 N of net force on a 5 kg block, what will its acceleration be?

$$a = \frac{F}{m} = \frac{10 \text{ N}}{5 \text{ kg}} = 2 \text{ m/s}^2$$

A 1 N force accelerates a toy car 2 m/s^2 . What is the mass of the car?

$$m = \frac{F}{a} = \frac{1 \text{ N}}{2 \text{ m/s}^2} = 0.5 \text{ kg}$$

Oct 26-7:31 AM

Practice Problems

- * Work alone or with a partner
- * Make sure you understand the first 4 problems (for sure)
- * If you've got those, pick out a couple challenge problems that look do-able. Check with others to see what they got.

Summary at bottom of notes -- in your own words, incorporating all we did today, how would you answer the EQ?

Oct 27-7:25 AM

Daily 3 Questions

- * Every day except test/project days
- * 3 Questions on the topics of the day
- * Main source of daily points
- * I am happy to give credit when I have no concerns about someone giving or getting help with the answers.

CP Hmwk - Do one of the challenge problems from the worksheet

You can't get your points if you don't have your NAME!!!

Name	Period
1.	
2.	
3.	

Sep 9-7:32 AM

1. Newton figured out the math equation that says _____ equals mass times acceleration.

- A. Inertia
- B. Velocity
- ☒ C. Force

2. The "equation triangle" for that equation is:



3. A 2 kg object is accelerated at 3 m/s/s: What is the force accelerating it?

$$F = m \cdot a = 2 \text{ kg} \cdot 3 \text{ m/s}^2 = \textcircled{6 \text{ N}}$$

ANSWER EQ IN SUMMARY or $6 \text{ kg} \cdot \text{m/s}^2$

Oct 8-6:48 AM